

No. 890,255.

PATENTED JUNE 9, 1908.

F. H. WESTON, JR. & F. C. DE REAMER.

INCLOSED FUSE.

APPLICATION FILED DEC. 6, 1904.

Fig. 1.

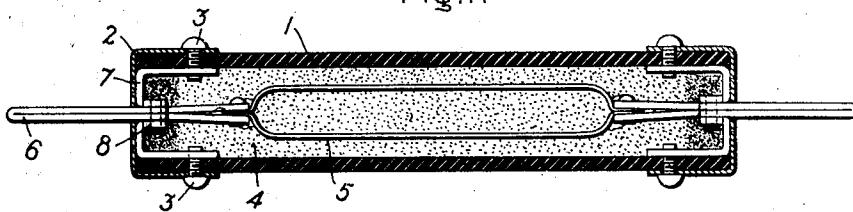


Fig. 2.

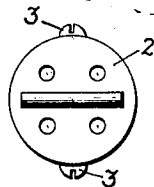
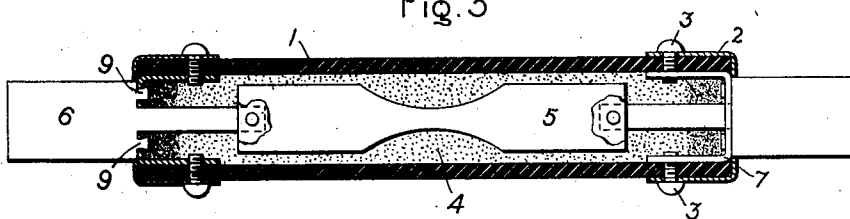


Fig. 3.



Witnesses:

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by *Albert B. Davis* Atty.

UNITED STATES PATENT OFFICE.

FREDERICK H. WESTON, JR., AND FRANK C. DE REAMER, OF SCHENECTADY, NEW YORK,
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INCLOSED FUSE.

No. 890,255.

Specification of Letters Patent.

Patented June 9, 1908.

Application filed December 6, 1904. Serial No. 235,711.

To all whom it may concern:

Be it known that we, FREDERICK H. WESTON, JR., and FRANK C. DE REAMER, citizens of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Inclosed Fuses, of which the following is a specification.

This invention relates to thermal cut-outs, and especially to those known in the art as inclosed fuses, wherein the fusible strip is incased in a barrel or shell which may be filled with absorbent material, and is armed at each end with metallic contact pieces which afford means for making an electrical connection between the fusible element and the terminals of the circuit in which it is interpolated.

The object of the present invention is to strengthen the construction at the ends where the metallic contact pieces are attached to the shell and the fuse. Heretofore trouble has been experienced at these points when the fuse blew, the caps sometimes being blown off owing to the shearing of the screws that held them to the shell. This difficulty has been obviated by the construction hereinafter set forth, wherein a reinforcing strip of metal is placed inside the tube at each end thereof, containing tapped holes to receive the screws that pass through the caps and tube. The strip is preferably U-shaped, the middle or bight of the U crossing the end of the tube and the legs extending into engagement with the opposite inner sides of the tube and receiving the inner ends of the screws. The blades to which the ends of the fusible element are attached pass out through the ends of the tube and are sustained firmly by the caps and also by the bights of the reinforcing strips.

In the accompanying drawing, Figure 1 is a longitudinal section of an inclosed fuse embodying our improvements; Fig. 2 is an end view thereof; and Fig. 3 is a longitudinal section of a modified construction.

The tube 1 is composed of fiber or any other suitable insulating material, and is provided with flanged end caps 2 of sheet metal which are secured to it by screws 3. The tube is preferably cylindrical, and is filled with some refractory material 4. The fusible element 5 is embedded in the refractory material and may be composed of one or more sections, as shown in Fig. 1. Its ends are electrically attached, as by means of solder,

to blades 6 of heavy sheet metal, which pass out through slots in the ends of the caps so as to afford a ready means for connecting the fuse with clips or other terminals.

In order to prevent the shearing off of the screws by the expansion of the gases generated when the fuse blows, we provide a reinforcing strip 7 at each end of the tube. This strip is preferably U-shaped, with its bight lying against or adjacent to the inside of the cap and its legs extending along the opposite sides of the tube. The inner ends of the screws are engaged with tapped holes in said legs, so that the screws are supported inside of the tube as well as outside, and the strain on them is distributed. The strips are attached to the blades, either by means of flanges or lips 8 on the strips which are riveted to the blades, as in Fig. 1; or by making the blade wider outside of the strip and providing it with short lugs 9 which pass through suitable holes in the strip and are headed down inside, as shown in Fig. 3; or in any other equivalent manner.

The reinforcing strips not only serve to transmit the strain directly to the tube and reduce the liability of shearing off the screws, but they also strengthen the attachment of the blades to the tube, and make a much more rigid structure than those with which we have been familiar.

What we claim as new and desire to secure by Letters Patent of the United States, is:

1. In an inclosed fuse, the combination with the insulating tube, of a cap closing the end of the tube and having a flange extending over the outer surface thereof, a contact member extending through the end of said cap, and having portions extending laterally toward the walls of said tube and connecting means extending through the flange of the cap, the walls of the tube and engaging said portion.

2. In an inclosed fuse, the combination with the insulating tube, of a cap closing the end of the tube and having a flange extending over the outer surface thereof, a contact member extending through said cap and provided with leg portions adapted to engage the inner surface of said tube, and screws extending through the flange of the cap, the walls of the tube and the legs of said contact member.

3. In an inclosed fuse, the combination with the insulating tube, of a cap closing the

end of the tube and having a flange extending over the outer surface thereof, a contact member extending through said cap, a reinforcing strip secured to said contact member
5 and engaging the inner surface of the tube, and connectors extending through the flange of the cap, the walls of the tube and the outer ends of the reinforcing strip.

4. In an inclosed fuse, the combination
10 with the tube, of an end cap, a reinforcing strip inside said tube, a blade projecting from the end of the tube and secured to said strip, and a fusible element attached to said blade.

5. In an inclosed fuse, the combination 15 with the tube, of an end cap having a slot, a reinforcing strip inside said tube, a fusible element, a blade having a wide portion provided with lugs passing through said strip, and screws extending through the cap, tube 20 and strip.

In witness whereof we have hereunto set our hands this 5th day of December, 1904.

FREDERICK H. WESTON, Jr.

FRANK C. DE REAMER.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.